

We Claim:

1. In a fill composition for coating contact or via holes formed in a base material to protect the base material during etching processes, the composition including a quantity of solid components including a polymer binder, and a solvent system for said solid components, the improvement which comprises:
said composition being at least about 70% removed from the base material when subjected to a pre-bake thermal stability test; and
said composition having less than about 15% shrinkage when subjected to a film shrinkage test.
2. The composition of claim 1, said solvent system boiling point being less than about 160°C.
3. The composition of claim 1, said solvent system having a flash point of greater than about 85°C.
4. The composition of claim 1, wherein said polymer binder has a molecular weight of less than about 80,000.
5. The composition of claim 1, wherein said polymer binder comprises polyacrylate.
6. The composition of claim 1, wherein said solvent system includes a solvent selected from the group consisting of alcohols, ethers, glycol ethers, amides, esters, ketones, and mixtures thereof.
7. The composition of claim 6, wherein said solvent is PGME.
8. The composition of claim 1, wherein said composition includes a cross-linking agent.

9. The composition of claim 8, wherein said cross-linking agent is selected from the group consisting of aminoplasts, epoxides, isocyanates, acrylics, and mixtures thereof.

5 10. The composition of claim 1, wherein said polymer binder includes a cross-linking moiety.

11. The composition of claim 8, wherein the cross-linking temperature of said composition is from about 150-220°C.

10

12. The composition of claim 1, wherein said solid components, when mixed together, have a melting point of less than about 200°C.

13. The composition of claim 1, said composition and said base material
15 each having respective etch rates, said composition etch rate being approximately equal to said base material etch rate.

14. The composition of claim 1, said composition further including a light-absorbing dye.

20

15. The composition of claim 14, wherein said dye is bonded to said polymer binder.

16. The composition of claim 1, said composition further including a wetting
25 agent.

17. The composition of claim 16, wherein said wetting agent is a fluorinated surfactant.

30